

REMARKS

Reconsideration is requested in view of the above amendment and the following remarks. Claims 1 and 21 are amended. Claims 11 and 25 are canceled without prejudice or disclaimer. New claim 26 is added. Claims 1-10, 12-18, 21, 24, and 26 are pending.

Applicant would like to thank Examiner Doan for the telephone interview conducted on January 16, 2002 with Applicant's representative James A. Larson, and for the follow-up telephone interview on March 27, 2002 between Examiner Doan, her supervisor John Wilson, and Applicant's representative James A. Larson. During the interview, Applicant presented draft claim amendments. In addition, Applicant explained that the language "irregular texture" is supported by the original disclosure, and that the prior art (Switzerland CH 237277, and US 1,907,196 to Aitken) does not teach irregular textures. Applicant appreciates the helpful assistance of the Examiner in trying to reach allowable claims.

Subsequent to the telephone interviews discussed above, in a telephone call from the Examiner on May 1, 2002, the Examiner indicated that claim 1 as presented herein appeared to be allowable over the prior art. This indication by the Examiner is greatly appreciated.

Amendments

Claims 1 and 21 recite that the abrading surface comprises an irregular texture. This language is supported by the original disclosure, for example page 1, line 22, which describes the roughness as varying from 10 to 100 μm and Figures 2-4 which illustrate the abrading surface 4 as being irregular in texture. A surface that has a varying roughness is irregular in texture, so the language "irregular texture" is supported by the original disclosure.

Claims 1 and 21, as amended, additionally recite that the irregular texture has a roughness that varies from 10 to 100 μm . Applicant notes that this range was recited in claim 1 as originally filed. As a result of the amendment to claim 1, claim 11 has been canceled.

Claim 21, as amended, also recites the step of hardening the glass body. In addition, claim 26 recites that the glass comprises hardened glass. By hardening the glass body, the stability and safety of the nail file are increased by reducing the likelihood of breakage if the nail file is dropped (page 2, last paragraph). Glass breakage should be prevented in order to minimize the chance of cutting one's foot or other body part on glass shards or pieces in the

event the nail file is dropped. As a result of this amendment to claim 21, claim 25 has been canceled.

Simplicity of Design and Production

A significant feature of Applicant's nail file is that it is formed of a single, integral stratum comprising glass. A single piece of glass is used to form the entire nail file. There is no complicated production or lamination process of the type that is often necessary in the prior art to build up the nail file structure. For example, Switzerland 237277 discloses a smoothing file in which a support layer is coated with a vitrified material which must be allowed to harden before the teeth can be cut into the coated layer. This coating step complicates production of the file and increases processing time, thereby increasing production costs.

In contrast, Applicant's nail file can be produced more cheaply and easily than previous nail files, as it is a single piece. For relatively inexpensive items like nail files, any reduction in production costs can have a significant impact on the resulting profits of the manufacturer and/or a reduction in sales price.

Another significant advantage of Applicant's nail file is the irregular texture of the roughened abrading surface. The irregularity of the abrading surface is advantageous in that it simplifies the process for forming the abrading surface. To achieve regularity in an abrading surface of a file, the process that is used must be implemented with relatively exacting standards and procedures in order to achieve the desired regularity. For example, U.S. Patent 1,907,196 to Aitken discloses sandblasting of the teeth, which must occur at particular angles between the sand blast and the teeth in order to achieve the desired pattern of regular teeth surfaces (page 2, lines 46+; Figures 6-8). In addition, in Switzerland 237277, the cutting process that is used must produce a regular arrangement of teeth that are parallel to each other. Any variation in implementing the processes of Aitken and Switzerland 237277, and other processes in which regularity is desired, can result in teeth that are not regular. As a result, in such instances, the files in which regularity is sought would be considered defective.

In contrast, because the surface of Applicant's nail file is intended to be irregular in texture, there is no need to utilize a process that achieves exacting regularity. The process that is used can therefore be implemented using less exacting standards because regularity in the abrading surface is not being sought. This contributes to a further reduction in production costs.

Claim rejections

In the November 29, 2001 office action, claims 1, 3, 6, 8-10, 21 and 24-25 are rejected under 35 USC 103(a) as being unpatentable over Switzerland CH 237277 and US 1,907,196 to Aitken. This rejection is respectfully traversed and reconsideration is requested in view of the following comments.

In addition, claims 2, 4-5 and 7 are rejected under 35 USC 103(a) as being unpatentable over Switzerland CH 237277, US 1,907,196 to Aitken, and US 6,145,512 to Daley. This rejection is respectfully traversed and reconsideration is requested in view of the following comments.

Further, claim 11 is rejected under 35 USC 103(a) as being unpatentable over Switzerland CH 237277, US 1,907,196 to Aitken, and US 5,361,786 to Pangburn. This rejection is respectfully traversed and reconsideration is requested in view of the following comments.

Still further, claim 12 is rejected under 35 USC 103(a) as being unpatentable over Switzerland CH 237277, US 1,907,196 to Aitken, and US 3,866,618 to Tsukamoto. This rejection is respectfully traversed and reconsideration is requested in view of the following comments.

Still further, claims 19 and 23 are rejected under 35 USC 103(a) as being unpatentable over Switzerland CH 237277, US 1,907,196 to Aitken, and US 4,785,835 to Bray. This rejection is respectfully traversed and reconsideration is requested in view of the following comments.

Still further, claims 20 and 22 are rejected under 35 USC 103(a) as being unpatentable over Switzerland CH 237277, US 1,907,196 to Aitken, and US 4,497,694 to Bankier et al. This rejection is respectfully traversed and reconsideration is requested in view of the following comments.

Applicant respectfully submits that the claims are patentable over the cited prior art. The nail file, which is the subject of the invention defined in claim 1, and the method of making a nail file, as recited in claim 21, are simply not suggested by the prior art.

Product claim 1

Claim 1 recites a nail file comprising a body which has first and second sides, first and second edges, a first end, and at least one abrading surface. The abrading surface comprises an

irregular texture having a roughness that varies from about 10 μm to about 100 μm . In addition, the body, the first and second sides, the first and second edges, the first end, and the at least one abrading surface are formed of a single, integral stratum, with the integral stratum comprising glass.

CH 237277 and Aitken do not teach or suggest a nail file as claimed in claim 1.

CH 237277 discloses a smoothing file having a "series of parallel teeth" (translation, para. 4). The edges of the teeth are described as being "perfectly smooth all along its length" (see page 2 of the translation, lines 4-5). The teeth are cut into the material of the file with a grinding wheel (translation, para. 4 and subordinate claim 5). In one embodiment disclosed by CH 237277, the material in which the teeth are cut can be a sheet of transparent or opaque glass (translation, para. 4). In another embodiment, the file is a multipiece file having a metal support and a layer of vitrified material on the metal support (translation, para. 5).

There is no disclosure that the teeth are anything but parallel and evenly spaced. In other words, the abrading surface provided by the teeth is regular in texture. Moreover, the file in CH 237277 is intended to polish or buff nails, and is not used for filing to reduce the length or change the shape of the nail. The original title of this document is "Lime a' polir", which when translated literally, means "file for polishing". Moreover, the fact that the file is used for polishing or buffing rather than filing is evident from the construction of the file which has parallel, regular teeth. Use of the file on a nail in the direction parallel to the teeth would have no abrasive effect at all. On the other hand, use of the file in a direction perpendicular to the teeth would tear or break the nail. The only way the file could be effectively used is on the major surface of a nail to accomplish polishing or buffing, not on the end of the nail. Thus, the file in CH 237277 is a different type of file than the file that is claimed.

Aitken discloses a sand blasting process that is used to sharpen a toothed tool, such as a file (page 1, lines 65-68). The process is used to produce or restore the cutting edges of the teeth (page 1, lines 69-72). The effects of the sand blasting occur mainly at the outer tooth surfaces (page 1, lines 14-16; page 2, lines 39-45). As shown in Figures 7 and 8, the outer tooth surfaces are smooth, and the teeth are regularly spaced. The abrading surface is therefore regular. There is no disclosure that any portion of the file other than the outer tooth surfaces is affected by the sand blasting. Thus, in order to affect the limited area of the outer tooth surfaces, the sand blasting process in Aitken must be implemented at relatively precise angles to avoid impacting



undesirable areas of the tooth surfaces (page 2, lines 46-65). This requirement for precise processing increases production costs because the sand blasting mechanism must be designed so as to be capable of precise operation. Further, it is to be noted that the process in Aitken relies upon the pre-existence of teeth; the process is not used to create teeth.

Moreover, the file disclosed by Aitken is a file that is used to work metal, wood, etc.; it is not a nail file. This is evident from the disclosure of Aitken which describes the restoration or production of cutting edges (page 1, lines 69-72), and file sharpening (page 1, line 19). A nail file is a disposable item. Once the abrading surface is worn away, the nail file is disposed of, and a new one is used in its place. The abrading surface on a nail file, regardless of the type of surface that is used, is not typically restored or resharpened. Thus, a person having ordinary skill in the art would realize that the process in Aitken is not applicable to nail files.

Neither CH 237277 or Aitken disclose an abrading surface having an irregular texture. As discussed above, the abrading surfaces in these documents are regular in texture. Nor do these references teach a roughness that varies from about 10 μm to about 100 μm .

Even if one of the surfaces were irregular, there is no reason why a person having ordinary skill in the art, with knowledge of the smoothing file in CH 237277, would turn to the process disclosed in Aitken. As discussed above, files used to dress human nails are disposable; they are not typically restored or refurbished. Thus, although Aitken discloses a process for restoring tooth surfaces, there is no reason why a person having ordinary skill in the art would utilize such a process on the smoothing file of CH 237277 which is intended to be disposed of after its abrading surface is worn.

Further, the material of a file for nails is such that it is worn away during use and the thickness of the file is thereby reduced. Thus, it would most likely be impossible to restore the teeth in CH 237277 once they are worn. Even if were possible, it would most likely be necessary to build-up the thickness of the file back to its pre-worn thickness. It would simply not be obvious to take a worn file for nails, process it so that it has a thickness equal to its pre-worn thickness, and then use a sand-blasting process on the file. The relatively low sales cost of nail files would effectively prohibit such extensive processing, thereby arguing against the proposed combination.

The Examiner has previously relied upon, in part, U.S. Patent 5,361,786 to Pangburn to reject claim 11, indicating that Pangburn teaches an abrading surface with a roughness varying

from 10-100 μm . Applicant respectfully submits that Pangburn is not combinable with CH 237,277 and Aitken, and even if combined, the invention recited in claim 1 does not result.

Pangburn discloses a nail treatment device comprising a substrate 10 and an undulating abrading surface 11a formed by glass beads 11 embedded in the substrate material 10 (col. 2, lines 15-22). The glass beads 11 are disclosed as having a size between 5 and 400 microns (col. 2, lines 40-42).

It is important to note that this size of the glass beads 11 is the bead size prior to being embedded into the substrate material 10. During formation of the device, the glass beads will be pushed into the material of the substrate 10 (col. 2, lines 32-33). How far the glass beads 11 are embedded is not disclosed by Pangburn. As a result, the actual distance that the glass beads 11 project above the surface of the substrate 10 so as to determine its roughness is a matter of pure speculation. The actual roughness of the Pangburn device is not explicitly disclosed, and one can only speculate as to whether the roughness of the Pangburn device actually does fall within the claimed range.

Even assuming that the roughness of the Pangburn device does fall within the claimed range, which Applicant does not concede, there would be no reason why a person having ordinary skill in the art would combine CH 237,277 and Aitken with Pangburn.

As discussed above, CH 237,277 and Aitken disclose files having abrading surfaces with regular textures formed by parallel, evenly spaced teeth. In contrast, the abrading surface in Pangburn has an irregular texture. It would not be obvious to combine the teachings of a file having an abrading surface with a regular texture with a file having an abrading surface with an irregular texture. At best, Pangburn teaches replacing the regular textured abrading surface of CH 237,277 with the irregular textured surface composed of glass beads embedded in the substrate. Alternatively, Pangburn would provide a teaching that the teeth height in CH 237,277 should be a certain dimension. In any event, the combination of CH 237,277, Aitken and Pangburn does not teach an abrading surface having an irregular texture, all in a single, integral stratum of glass.

In new dependent claim 26, the glass is recited as being hardened glass. A nail file can often be dropped during use. Hardened glass prevents the glass nail file from breaking when it is dropped. This feature is not taught by CH 237,277 or Aitken.

Ch 237,277 discloses that "no heat treatment following cutting is necessary" (translation page 2, 6-7). Aitken discloses a sand blasting process that is used to restore the cutting edges of

teeth that form the abrading surface of a file. No mention is made of glass, let alone hardened glass.

Process claim 21

Claim 21 recites a method of making a nail file, wherein a body comprising a single, integral stratum of glass is roughened by sanding and/or acid-etching to produce at least one abrading surface having an irregular texture with a roughness that varies from about 10 μm to about 100 μm . Further, the glass body is hardened.

Firstly, the patentability of this claim needs to be determined separately from the patentability of product claim 1. The process limitations "acid-etching" and "sanding" must be given patentable weight in process claim 21. As discussed above, a significant advantage of Applicant's process is that it is simple and reduces production costs.

CH 237277 discloses cutting teeth into a smoothing file, where the teeth form the abrading surface of the file. The teeth are cut using a grinding wheel. This document does not teach using acid-etching or sanding to produce the teeth of the abrading surface. Further, the abrading surface formed by the teeth is regular. An irregular texture with a roughness that varies as claimed is not disclosed.

Aitken discloses a sand blasting process that is used to sharpen a toothed tool, such as a file (page 1, lines 65-68). The process is used to produce or restore the cutting edges of the teeth (page 1, lines 69-72). The effects of the sand blasting occur mainly at the outer tooth surfaces (page 1, lines 14-16; page 2, lines 39-45). As shown in Figures 7 and 8, the outer tooth surfaces are smooth, and the teeth are regularly spaced. There is no disclosure that any portion of the file other than the outer tooth surfaces is affected by the sand blasting. Thus, in order to affect the limited area of the outer tooth surfaces, the sand blasting process in Aitken must be implemented at relatively precise angles to avoid impacting undesirable areas of the tooth surfaces (page 2, lines 46-65). This requirement for precise processing increases production costs because the sand blasting mechanism must be designed so as to be capable of precise operation. Further, it is to be noted that the process in Aitken relies upon the pre-existence of teeth; the process is not used to create teeth.

Neither CH 237277 or Aitken teach using acid-etching or sanding to roughen a glass body to produce an abrading surface. CH 237277 produces the teeth of its abrading surface



using a grinding wheel. Aitken does not produce teeth with his disclosed sand blasting process. Rather, Aitken restores the cutting edge to pre-existing teeth of an abrading surface. Thus, Aitken does not produce an abrading surface with an irregular texture using sand blasting.

At best, Aitken suggests a process by which the teeth in CH 237277 could be restored or sharpened. However, files used to dress human nails are disposable items; they are not typically restored or refurbished. Thus, although Aitken discloses a process for restoring tooth surfaces, there is no reason why a person having ordinary skill in the art would utilize such a process on the smoothing file of CH 237277 which is intended to be disposed of after its abrading surface is worn.

Still further, the material of a file for nails is such that it is worn away during use and the thickness of the file is thereby reduced. Thus, it would most likely be impossible to restore the teeth in CH 237277 once they are worn. Even if were possible, it would most likely be necessary to build-up the thickness of the file back to its pre-worn thickness. It would simply not be obvious to take a worn file for nails, process it so that it has a thickness equal to its pre-worn thickness, and then use a sand-blasting process on the file. The relatively low sales cost of nail files would effectively prohibit such extensive processing.

Summary

For at least the reasons discussed above, claims 1 and 21 are patentable over CH 237277 and Aitken. Withdrawal of all of the rejections and allowance of these claims are requested. Claims 2-10, 12-18, 24, and 26 depend from either claim 1 or claim 21, and incorporate the limitations thereof. Therefore, the dependent claims are patentable along with claims 1 and 21 and need not be separately distinguished. Applicant does not concede the correctness of the rejections to the dependent claims, and reserves the right to present additional arguments rebutting the rejections.




Conclusion

Applicants believe that the application is in condition for allowance. Favorable consideration is respectfully requested. If any further questions arise, the Examiner is invited to contact Applicants' representative at the number listed below.

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